

USSR

UDC: 537.312.62

KADYKOVA, G. N., MOLOTILOV, B. V., PROKOSHIN, A. P., SERGEYEV, I. P.,
PEDOTOV, L. N.

"Properties of 35BT Superconductive Alloy"

Moscow, Sverkhprovodnyashchiye splavy i soyedin.--sbornik (Superconductive Alloys and Compounds--collection of works), "Nauka", 1972, pp 160-166 (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12D558 [résumé])

Translation: The structure, electrical resistance and thermal expansion of 35BT superconductive alloy containing titanium and small additives of zirconium in addition to 35% niobium were studied in the state after cold deformation, annealing, and also during heating. A maximum current density $I_k = 1 \cdot 10^5$ A/cm² in a transverse magnetic field of 30,000 Bi/cm was reached after cold deformation and annealing at 450°C for 4 hours. Segregations of α -phase with transverse dimensions of about 300 Å are observed in the structure of the alloy in this state. On the $I_k(H)$ curve of the specimens in the state after cold deformation and after annealing at 200-300°C, a peak is observed due to the presence of α -phase in the alloy structure. Four illustrations, bibliography of 14 titles.

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USSR

BRODER, D. L., PLATOVSKIKH, Yu. A., POPKOV, K. K., SERGEYEV, I. V.

"Use of Jakobi Polynomials to Describe Propagation of Gamma Radiation"

Minsk, Vestsi Akademii Navuk BSSR: Seryya Fizika-Energetychnykh Navuk,
No 1, 1973, pp 13-18

Abstract: It is shown to be possible to obtain an approximating kinetic equation in cylindrical geometry by Jacobi polynomial expansion of the angular relation containing two arbitrary parameters. The distribution function and scattering kernel are expanded by polynomials having different parameter values. A multigroup system of equations is obtained. By using Jacobi polynomials for the approximate solution of the kinetic equation written in a modified coordinate system it is possible to describe satisfactorily the space-energy relation of the radiation flux even in the first approximation.

1/1

1/2 027
TITLE--DUCTILITY OF HIGH STRENGTH CONSTRUCTIONAL ALLOY STEELS -U-
UNCLASSIFIED
PROCESSING DATE--23 OCT 70
AUTHOR--(05)-BRAUN, M.P., BORISOV, G.P., KRUKOVSKAYA, G.N., NORZHARETTO,
A.A., SERGEYEV, I.V.
COUNTRY OF INFO--USSR
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(2), 123-5
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--STRUCTURAL STEEL, IMPACT STRENGTH, STEEL HEAT TREATMENT, STEEL
HARDENING, METAL CASTING, ALLOY STEEL, CHROMIUM STEEL, MANGANESE STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1994/1787

STEP NO--UR/0148/70/013/002/0123/0125

CIRC ACCESSION NO--AT0115616

UNCLASSIFIED

2/2 027

UNCLASSIFIED

PROCESSING DATE--23OCT70.

CIRC ACCESSION NO--AT0115616

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE IMPACT STRENGTH OF THE CAST CONSTRUCTION STEEL WAS INCREASED BY APPLYING OPTIMAL ALLOYING AND HEAT TREATMENT WHILE MAINTAINING 36-37 HRC HARDNESS. EIGHT GRADES OF STEEL (CR 1.08-1.66, SI 0.40-2.79, MN 1.58-2.29PERCENT) WERE MELTED IN A BASIC INDUCTION FURNANCE DEOXIDIZED WITH 0.1PERCENT AL, AND CAST. THE CASTINGS WERE ANNEALED 6 HR AT 950DEGREES AND CUT INTO BARS WHICH WERE NORMALIZED AT 950DEGREES. BILLETS WERE (1) QUENCHED FROM 930-40DEGREES, (2) NORMALIZED AT 930-40DEGREES WITH SUBSEQUENT TEMPERING AT 200DEGREES, OR (3) HEATED 1 HR AT 300-320DEGREES AND QUENCHED IN MOLTEN SALTPETER. THE IMPACT STRENGTH AND HARDNESS WERE DETD. AFTER EACH OF THE 3 HEAT TREATMENT CONDITIONS: A STEEL AT GIVEN CONDITIONS AFTER LOW TEMP. TEMPERING MAY HAVE A LARGER OPTIMUM CONC. OF CR, MN AND SOME OTHER ALLOYING ELEMENTS THAN AFTER MEDIUM OR HIGH TEMP. TEMPERING. THE OPTIMUM CONCNS. OF THE ALLOYING INGREDIENTS ARE INTERRELATED. FACILITY: INST. PROBL. LIT'VA, KIEV, USSR.

UNCLASSIFIED

USSR

UDC: 652.95

~~SERGEYEV, L. I.~~, KULAKOV, V. N., BELYSHEV, L. K., KUZNETSOVA, M. G., SAKHNOV, N. S.

"Experience in the Use of N-1 Fraction as a Herbicide"

Moscow, Khimiya seraorgan. soyedin., soderzhashchikhsya v neftiyakh i nefteproduktakh--sbornik (Chemistry of Organosulfur Compounds Present in Petroleum and Petroleum Products--collection of works), T. 9, "Vyssh. shkola", 1972, pp 60-65 (from RZh-Khimiya, Vol 10, May 73, abstract No 10N594 by T. A. Belyayeva)

Translation: Data are presented on the physiological activity and possibility for practical utilization of the narrow fraction of high-sulfur aromatic extract called N-1. The initial raw material was light gas oil of catalytic cracking. The sulfurous aromatic compounds are extracted with furfural and "kalosha" gasoline. After the solvents are driven off, a sulfur-aromatic concentrate is obtained from which a narrow fraction is isolated by rectification with the following characteristics: boiling range 250-285°C, density 0.99, molecular weight 152, sulfur content 4.6%, content of aromatic hydrocarbons 78%, including 56% bicyclic. The hydrocarbons are chiefly dimethyl
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USSR

SERGEYEV, L. I., et al., Chemistry of Organosulfur Compounds Present in Petroleum and Petroleum Products -- collection of works, T. 9, "Vyssh. shkola", 1972, pp 60-65

naphthalines. The organosulfur compounds consist mainly of alkyl derivatives of benzothiophene. For using N-1 fraction as a herbicide or growth stimulator, aqueous emulsions are prepared using OP-7 or OP-10. Laboratory and field experiments are done with concentrations of 0.00001, 0.0001, 0.001, 0.01, 0.1, 1 and 10%. Depending on the concentration, N-1 fraction has herbicidal (0.01-10%) or stimulating (0.001-0.0001%) properties for flowering plants. Even a 1% emulsion of N-1 is heavily damaging to *Stellaria media* (chickweed). In the appropriate quantities N-1 is a contact herbicide and is most effectively used in controlling annual weeds.

2/2

1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--ON THE MECHANISM OF THE DEPRESSION OF THE INHIBITORY HERING BREUER
REFLEX -U-
AUTHOR-(02)-FRANKSHEYN, S.I., SERGEYEV, L.N.
COUNTRY OF INFO--USSR
SOURCE--FIZIOLOGICHESKIY ZHURNAL SSSR IEMNI I. M. SECHENOVA, 1970, VOL 56,
NR 5, PP 764-766
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SLEEP, CRANIAL NERVE, BREATHING, RESPIRATORY PHYSIOLOGY,
REFLEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--3001/1604

STEP NO--UR/0239/70/056/005/0764/0766

CIRC ACCESSION NO--AP0127095

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0127095

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. REFLEX APNOE EVOKED BY STIMULATION OF THE VAGUS WAS INVESTIGATED IN UNRESTRAINED CATS WITH CHRONICALLY IMPLANTED ELECTRODES. THE APNOE WAS CONTINUAL DURING THE SLEEP, AND MORE DISTINCT DURING THE SYNCHRONIZED SLEEP THAN DURING THE DESYNCHRONIZED ONE. DURING WAKEFULNESS, PARTICULARLY IN THE ALERTED CATS, STIMULATION OF THE VAGUS DID NOT PRODUCE ANY APNOE. SIGNIFICANCE OF THE PRESENTED DATA FOR ANALYSIS OF THE DEPRESSION OF THE HERING BREUER INHIBITORY REFLEX IN MAN, IS DISCUSSED. FACILITY: INSTITUTE OF NORMAL AND PATHOLOGICAL PHYSIOLOGY ACAD. MED. SCI. USSR, MOSCOW.

USSR

UDC 668.3

SEDOVA, V. I., ~~SERGEYEV, L. V.~~, Candidate of Sciences

"A New Method for Preparing the Adhesive UF-235"

Leningrad, Optiko-mekhanicheskaya promyshlennost', No. 9, Sep 71, p 70

Abstract: A new, considerably simplified method for preparing UF-235 adhesive was developed by the authors and is recommended for industrial use. This adhesive is presently the only one applied in the optics industry for cementing parts for ultraviolet and luminescence microscopy. The glue is transparent over the entire visible region and up to 20 nm in the ultraviolet region. It is a mixture of polyvinylacetate in cyclohexanol. In the new method the polymerization of vinylacetate under ultraviolet radiation of the PRK-4 tube is conducted directly in the cyclohexanol medium. The adhesive obtained by the new method is called UF-232M. It has the same optical and physicomechanical properties as UF-235.

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Acc. Nr:

AP0052421

Abstracting Service:

CHEMICAL ABST. 570

Ref. Code:

4R0460

101322y Tensometric study of the final stages of polymerization. Ol'khovik, O. E.; Sergeyev, L. V. (Leningrad. Tekhnol. Inst. Kholod. Prom., Leningrad, USSR). *Vysokomol. Soedin., Ser. B* 1970, 12(1), 60-1 (Russ). The polymn. kinetics of a compn. contg. epoxy resin ED-5, polyethylene polyamine, tricresyl phosphate, and marshalit was studied by wire tensometry. The tensometers measured relative deformation within $\pm 0.5 \times 10^{-6}$ and thus offered a means to control the polymn. from the gel formation point to the final stages of hardening. The shrinkage of the polymer was incomplete even after 5000 hr at 20°. The linear expansion coeff. of the hardened resin was detd. from dilatometric curves of temp. vs. shrinkage.

CKJR

28

REEL/FRAME

19821053

EQUIPMENT

Gyroscopic

UDC: 531.383

USSR

SERGEYEV, M. A.

"Effect of Periodic Perturbations on Readings of the Ground
Gyrocompass"

Leningrad, Priborostroyeniye, No 5, 1972, pp 72-77

Abstract: By investigating a single, generalized compass suspension system, the author obtains results applicable to particular types of the ground gyrocompass, also known as the gyrotheodolite. He begins his analysis with the differential equations for small oscillations of the gyrocompass' sensitive element with a constant kinetic moment of the rotor and in the presence of external perturbations. These equations are reduced to a single linear differential equation in matrix form from which expressions for the motion of the sensing element in each coordinate and under any initial conditions can be obtained. The expressions obtained show that the motion of the element is made up of natural and forced oscillations. At resonance, the latter complicate the readings obtained from the element and can be reduced by damping in the instrument's base. In a gyrocompass of the MT-1 type, the amplitude of the forced oscillations amounts to about 30". The author is associated with the Leningrad Institute of Precision Mechanics and Optics.

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Acc. Nr.: AND102268

Ref. Code: UR 0533

AUTHOR-- SERGEYEV, M.

TITLE-- PROTOTYPE IN FLIGHT

NEWSPAPER-- SOTSIALISTICHESKAYA INDUSTRIYA, APRIL 16, 1970, P 4,
COLS 2-4

ABSTRACT-- CALCULATIONS HAVE SHOWN THAT DIRIGIBLES FOR CARRYING UP
TO 200 AND MORE TONS FOR FLIGHTS OF 15-17 THOUSAND KILOMETERS ARE
FEASIBLE. A DIRIGIBLE MAY "HOVER" FOR PROLONGED PERIODS OF TIME.
THE LENINGRAD PUBLIC BUREAU OF DIRIGIBLE CONSTRUCTION UNDER
V. B. MURYCHEV HAS DESIGNED AN ALL METALLIC DIRIGIBLE "TSM-100"
FOR LIFTING 100 TONS. THE "ORGTEKHSTROY" COMBINE OF THE CONSTRUC-
TION MINISTRY U.S.S.R. HAVE BUILT AND TESTED A 12-METER MODEL.
ITS BODY IS MADE OF DURALUMINUM, BAMBOO, BALSAM, AND COVERED WITH
DURALUMINUM FOIL. THE TESTS WERE CONDUCTED WITH CONSTRUCTION
APPLICATIONS IN MIND.

Reel/Frame
19860208

USSR

UDC: 621.395.664.12

KOKOSHKIN, V. P., SHAVRIN, S. F., ~~SERGEYEV, M. V.~~, FURSOVA, G. V.

"A Compander Echo Suppressor"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, Apr 72, Author's Certificate No 333715, Division H, filed 12 May 70, published 21 Mar 72, p 229

Translation: This Author's Certificate introduces a compander echo suppressor which contains a rectifier amplifier, and an expander and compressor with controlled two-terminal pair network. As a distinguishing feature of the patent, the operational reliability of the compander echo suppressor is improved with simultaneous simplification by connecting the input of the expander through the rectifier amplifier to the neutral points of the controlled two-terminal pair network of the compressor. The circuit of the controlled compressor is also connected to the neutral points of the same two-terminal pair network.

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USSR

UDC 621.396.6.019.3

ZHORZHOIANI, B. L., SERGEYEV, N. A.

"Investigation of Causes for Failures of Soldered Joints During Operation"

V sb. Obmen opytom v radiopromyshlennosti (Experience Pooling in the Electronics Industry--collection of works), Vyp. 6, Moscow, 1970, p 39 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 10V254)

Translation: The authors investigate the reasons for failures of elements based on a foil-covered dielectric. These studies show that the basic reason for failure is flux residue which causes considerable corrosion of the leads. Resumé.

1/2 021
UNCLASSIFIED
TITLE—CONFORMATIONAL ANALYSIS OF 4,CYCLOHEXENES USING HETERONUCLEAR
DOUBLE RESONANCE —U-
AUTHOR—(104)—ZEFIROV, N.S., SERGEYEV, N.M., CHEKULAYEVA, V.N., GURVICH,
L.G.
COUNTRY OF INFO—USSR
SOURCE—DOKL. AKAD. NAUK SSSR 1970, 190(2), 345-7
DATE PUBLISHED—70
SUBJECT AREAS—CHEMISTRY
TOPIC TAGS—CYCLOHEXENE, PROTON, NMR SPECTRUM, CHEMICAL SUBSTITUENT,
ORGANIC NITRO COMPOUND, BUTADIENE, NITRILE, ACRYLATE, ORGANIC SYNTHESIS
CONTROL MARKING—NO RESTRICTIONS
DOCUMENT CLASS—UNCLASSIFIED
PROXY REEL/FRAE—2000/1081
CIRC ACCESSION NO—AT0124738
STEP NO—UR/0020/70/190/002/0345/0347
UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124738

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM PROTON NMR SPECTRA OF CYCLOHEXENES WITH CHO, CO SUB2 ME, CN AND AC SUBSTITUENTS IT WAS CONCLUDED THAT 3,CYCLOHEXENE,1,CARBOXALDEHYDE HAS 70PERCENT CONFORMATION I (X EQUALS CHO), AND THAT THE CORRESPONDING CARBOMETHOXY COMPD. HAS 85PERCENT CONFORMATION I (X EQUALS CO SUB2 ME). KEEPING O SUB2 NCH:CHCN WITH BUTADIENE,1,1,4,4,D SUB4 IN THE PRESENCE OF HYDROQUINONE 3 DAYS GAVE 70PERCENT TRANS,1,NITRO,2,CYANO,4,CYCLOHEXENE, 3,3,6,6,D SUB4, M. 93-5DEGREES; THE ME TRANS,2,ACETYL,4,CYCLOHEXENE,1,CARBOXYLATE, 3,3,6,6,D SUB4, B SUB1 124-6DEGREES, M PRIME20 SUBD 1.4770 WAS PREPD. FROM THE DIENE AND ME ACETYLACRYLATE IN 15 HR AT 100DEGREES IN MEPh. FACILITY: MOSK. GOS. UNIV. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 019

UNCLASSIFIED

PROCESSING DATE--09OCT70

TITLE--NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY OF CYCLOPENTADIENYLMETALS.

III. ANALYSIS OF THE SPECTRUM OF 5, METHYLDICHLOROSILYCYCLOPENTADIENE

AUTHOR--(03)--SERGEYEV, N.M., AVRAMENKO, G.I., USTYNYUK, YU.A.

COUNTRY OF INFO--USSR

SOURCE--J. ORGANOMETAL. CHEM. 1970, 22(1), 79-88

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--MAGNETIC RESONANCE, PROTON, SPECTRUM, ORGANOSILICON COMPOUND,
CYCLIC GROUP, ACTIVATION ENERGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/1839

STEP NO--NE/0000/70/022/001/0079/0088

CIRC ACCESSION NO--AP0112823

UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0112823

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PMR SPECTRUM OF 5, (METHYLDICHLOROSILYL)CYCLOPENTADIENE IS ANALYZED AT VARIOUS TEMPS. AT MINUS 10DEGREES, NO DYNAMIC PROCESS OCCURS AND THE SPECTRUM IS DESCRIBED AS AN AAPRIME BBPRIME X SYSTEM. THE PARAMETERS OF THE SYSTEM HAVE BEEN ANALYZED COMPLETELY. THE TICKLING EXPTS. SHOW THAT THE DOWNFIELD SIGNAL BELONGS TO THE 1,4,PROTONS. THE ASSIGNMENT, AS WELL AS THE NATURE OF THE UNSYMMETRIC COLLAPSE, SHOW THAT THE METAL MIGRATES PREDOMINANTLY THROUGH A 1,3,SHIFT. THE METHYNE PROTON LINE WIDTH HAS BEEN MEASURED VS. TEMP. AT 0-50DEGREES AND THE ACTIVATION ENERGY OF THE METALLOTROPIC REARRANGEMENT IS 9 PLUS OR MINUS 1 KCAL.MOLE PRIME NEGATIVE1. THE PROTOTROPIC REARRANGEMENT PROCEEDS, CETERIS PARIBUS, BY 6 TO 7 ORDERS SLOWER. FACILITY: NMR LAB., M. V. LOMONOSOV STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--0900170
TITLE--NUCLEAR MAGNETIC RESONANCE SPECTROSCOPY OF CYCLOPENTADIENYLMETALS.
I. PMR SPECTRA OF METHYLDICHLOROSILYLCYCLOPENTADIENE -U-
AUTHOR--(03)--SERGEYEV, N.M., AVRAMENKO, G.I., USTYNYUK, YU.A.
COUNTRY OF INFO--USSR
SOURCE--J. ORGANOMETAL. CHEM. 1970, 22(1), 63-78
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--PROTON, MAGNETIC RESONANCE, ORGANOSILICON COMPOUND, CYCLIC
GROUP, SPECTRUM, ISOMER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1838 STEP NO--NE/0000/70/022/001/0063/0078
CIRC ACCESSION NO--AP0112822
UNCLASSIFIED

2/2 012
CIRC ACCESSION NO--AP0112822 UNCLASSIFIED PROCESSING DATE--09GCT70
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PMR SPECTRA OF
METHYLDICHLOROSILYLCYCLOPENTADIENE SHOW THE PRESENCE OF ALL 3 ISOMERIC
FORMS EQUILIBRATED THROUGH A PROTOTROPIC REARRANGEMENT. THE SATN.
TRANSFER TECHNIQUE APPLIED TO THE 5 ISOMER DEMONSTRATES THIS TO UNDERGO
A FAST METALLOTROPIC REARRANGEMENT. THE SIGNALS ARE ASSIGNED TO ISOMERS
OR NUCLEI BY DOUBLE RESONANCE. THE SPECTRUM OF THE MAIN VINYLIC ISOMER
HAS BEEN ANALYZED COMPLETELY INCLUDING THE SIGNS OF THE CONSTS. WITH THE
ASSUMPTION THAT PRIME3 J(HH) IS GREATER THAN 0 AND PRIME4 J(HH) IS
SMALLER THAN 0, THIS ISOMER IS 1, METHYLDICHLOROSILYLCYCLOPENTADIENE.
THE SPECTRUM OF 2, METHYLDICHLOROSILYLCYCLOPENTADIENE PRESENT AT A CONC.
SMALLER THAN OR EQUAL TO 5 PERCENT HAS BEEN PARTIALLY ANALYZED.
FACILITY: NMR LAB., M. V. LOMONOSOV STATE UNIV., MOSCOW, USSR.

UNCLASSIFIED

USSR

KLYUCHANTSEV, S.V., et al. V sb. Novoye v tekhn. poluprovodn. proiz-va, Voronezh, Voronezh University, 1971, pp 96-104

overall extent of the test program should not exceed 240 tests) and the separation of them into 14 or 32 groups; 2) Automatic monitoring and processing of the results of measurements (quantity and percentage of devices in each group, quantity and percentage of rejected devices), and also the entry of these results into the numerical printing [tsifropechat']. The system can change the quantitative composition of the equipment with the object of accommodation to the requirements of test, series, or mass production. 3 ill. 1 ref. V.P.

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Acc. Nr.

APC055672

Abstracting Service:
CHEMICAL ABST 5/70Ref. Code
NE 0000

105691r Nuclear magnetic resonance spectroscopy of metal-cyclopentadienyls. IV. Carbon-13 NMR spectra of sigma cyclopentadienyl compounds of silicon, germanium, and tin. Grishin, Yu. K.; Sergeev, N. M.; Ustynyuk, Yu. A. (NMR Lab., M. V. Lomonosov State Univ., Moscow, USSR). *J. Organometal. Chem.* 1970, 22(2), 361-4 (Eng). ¹³C NMR spectra of Si, Ge, and Sn cyclopentadienyl compds. were studied. ¹³C chem. shifts and *J*(¹³C-H) consts. verify the η -structure of the compds. The variation of the ¹³C NMR spectrum of C₅H₅Ge(CH₃)₂ with temp. shows that a fast metallotropic rearrangement occurs in this compd. at as low a temperature as 20°. ¹³C NMR data are discussed with ref. to the structure of metal cyclopentadienyls.

RCLC

REEL/FRAME

19840981

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USSR

UDC 621.762

SAMSONOV, G. V., SERGEYEV, N. N., DZODZIYEV, G. T., VEPRYANYUK, V. K., and
LATYAYEVA, L. V.

"Cermet Hard Alloys Based on Titanium Carbide"

Kiev, Poroshkovaya Metallurgiya, No 9, 1971, pp 42-45

Abstract: Conditions for obtaining TiC-Ni alloys and their possible use in cutting tools are investigated. The mixture for obtaining the alloys was prepared in a mill lined with hard alloys, in an ethyl alcohol medium. The ball size was 3-5 mm. To investigate the effect of grain size of initial powders on the structure and properties of TiC-Ni alloys, the ratio of ball weight to mixture weight was taken as 6:1, 10:1, and 15:1, and the grinding time was varied from 48 to 144 hours. Short bars 5 x 5 x 35 mm in size were pressed from the mixtures obtained in the different grinding regimes. The bars were sintered in two stages: first (preliminary) centering to remove decomposition products of the plasticizing agent and for final reduction of the oxides (in dried hydrogen at 700°), and the second (final) sintering -- in a vacuum of $5 \cdot 10^{-3}$ mm Hg at different temperatures and isothermal exposure times. It was shown that satisfactory mechanical properties (flexural strength = 107-115 kg/cm², and hardness -- 90-90.5 Rockwell Hardness, A-Scale) are shown by the alloy 80% TiC - 20% Ni obtained from finely pulverized mixtures

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USSR

SAMSONOV, G. V., et al, Kiev, Poroshkovaya Metallurgiya, No 9, 1971, pp 42-45

by sintering in a vacuum of $5 \cdot 10^{-3}$ mm Hg at 1300° and with isothermal exposure time of 30 minutes. It was found that for a 6:1 ratio of ball weight to mixture weight, even for maximum grinding time (144), following sintering the alloys exhibit porosity up to 0.4% and do not meet the requirements specified. The experimental alloys surpass the alloy T14K8 as to wear resistance by a factor of 1.6-1.8 for cutting using steel 50 at a rate of 120-180 m/min, and when used to reinforce drawing plates for wire-drawing, the wear-resistance of these alloys is superior to that of the VK6 alloy by a factor of 1.5-2.

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USSR

UDC 621.396.6.049.75.019.3

YELISOV, L. N., KOZLOV, E. S., SERGEYEV, N. P.

"Utilizing Analog Equipment to Estimate the Reliability of Printed Connections"

V sb. Metody mat. i fiz. modelir. i optimiz. parametrov radioelektron. apparatury. No 1 (Methods of Mathematical and Physical Simulation and Optimization of the Parameters of Radio Electronic Equipment. No 2 --- collection of works), Moscow, 1972, pp 123-124 (from RZh-Radiotekhnika, No 7, Jul 72, Abstract No 7V324)

Translation: The problem of estimating the reliability of printed joints is solved as a problem of elasticity theory. The biharmonic fourth-order equation describing the state of equilibrium of the printed structural element is derived which can be solved by electronic simulation. The solution technique using a vibration test unit with vibration sensors is described in general features the signals from which goes to a computer with modules for separating the harmonic component and envelope, an averaging module and a ratio module. The voltage field of the printed structure is obtained at the system output. The bibliography has 2 entries.

1/1

- 70 -

USSR

UDC: 518.5:681.3.06

SERGEYEV, N. P., RUDENKO, M. N., MESHCHERYAKOV, B. K.

"On the Problem of Modeling One Inverse Boundary Value Problem"

Uch. zap. Penz. politekhn. in-t (Scientific Notes of the Penza Polytechnical Institute), 1970, vyp. 3, pp 29-34 (from RZh-Kibernetika, No 7, Jul 71, Abstract No TV756)

[No abstract]

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1/1

Hydrobiology

USSR

SERGEYEV, O., Engineer

"The Live Sonar Mystery"

Moscow, Gudok, 6 Mar 71, p 4

Abstract: Elevated to the rank of "marine intellectuals" by ancient philosophers and subsequently ignored dolphins have again attracted the attention of many scientists who are trying to explain the natural sonar system of these friendly creatures, which is much more precise than any man-made solar system. In a research project conducted in the Crimea, dolphins had to find their way to food in a divided pool. A fish 15 cm long, positioned laterally, was identified from a distance of 12 meters, with signal intensity of 300-400 bars. When the signal path was purposely jammed, the dolphins increased the intensity of their signals 10 times. When broad-band interference was applied, they magnified their signals 20 times. The dolphins' inborn mechanism by which the reflected waves are analyzed to detect not only the presence but also the identity of an object is being studied in various laboratories by various experimental approaches. Since dolphins are very friendly to man, they may eventually be trained to help search for sunken ships, deliver tools, mail, and food to underwater workers, find and save lost divers, protect people from sharks, etc. and serve as navigators.

1/2 014 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--MEASURING THE THERMAL CONDUCTIVITY OF THIN LAYERS OF SOLIDS -U-

AUTHOR--(02)--SERGEYEV, O.A., CHISTYAKOV, YU.A.

COUNTRY OF INFO--USSR

SOURCE--TR. METROL. IN-TOV SSSR, WORKS OF METROLOGICAL INSTITUTES OF THE
REFERENCE--RZH-FIZIKA, NO 1, JAN 70, ABSTRACT NO 1A160
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--THERMAL CONDUCTIVITY, HEAT MEASUREMENT, LAMINATED STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/0979

STEP NO--UR/0000/70/000/111/0040/0C53

CIRC ACCESSION NO--AR0112139

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AR0112139

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ANALYSIS IS GIVEN OF ORIGINAL WORK DEALING WITH THE MEASUREMENT OF THERMAL CONDUCTIVITY OF THIN LAYERS OF SOLIDS. IT IS SHOWN THAT METHODS OF MEASURING THERMAL CONDUCTIVITY USED SUCCESSFULLY ON MASSIVE SPECIMENS ARE NOT PRACTICALLY SUITABLE FOR THIN LAYERS. IT IS CONCLUDED THAT THE USE OF CONVENTIONAL METHODS IS RESTRICTED TO THE REGION OF LOW VALUES OF THERMAL CONDUCTIVITY (BASICALLY NO MORE THAN 1 S.M. DEG) AND COMPARATIVELY THICK LAYERS OF THE SPECIMENS STUDIED (200. MICRONS AND UP).

UNCLASSIFIED

USSR

UDC 53:07/.08

S
SERGEYEV, O. A., CHISTYAKOV, Yu. A.

"Measuring the Thermal Conductivity of Thin Layers of Solids"

Tr. metrol. in-tov SSSR (Works of Metrological Institutes of the USSR), vyp. 111 (171), pp 40-53 (from RZh-Fizika, No 1, Jan 70, Abstract No 1A160)

Translation: An analysis is given of original work dealing with the measurement of thermal conductivity of thin layers of solids. It is shown that methods of measuring thermal conductivity used successfully on massive specimens are not practically suitable for thin layers. It is concluded that the use of conventional methods is restricted to the region of low values of thermal conductivity (basically no more than 1 W/m.deg) and comparatively thick layers of the specimens studied (200 microns and up). Bibliography of 22 titles. Authors' abstract.

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USSR

UDC 621.315.592

VAKULENKO, O. V., GOVOROVA, O. A., SERGEYEV, O. T., Kiev State University imeni T. G. Shevchenko

"Effect of Ultraviolet Illumination on Infrared Absorption in SiC(6H)"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 956-957

Abstract: Analysis of the temperature dependence of the Hall effect in n-type SiC(6H) gives a value of 0.095 electron volts for the nitrogen activation energy E_d [G. A. Lomakina, et al., FTT, No 12, 2918, 1970]. Along the long-wave side of the lattice bands at the temperature of liquid nitrogen a structure is observed which can be caused by photoionization of the impurity atoms (nitrogen). Ultraviolet illumination was used to discover the mechanism of this absorption. Graphs are presented showing the increase in optical density in the presence of illumination. The increase in absorption on irradiation of SiC(6H) crystals by photons with an energy exceeding the width of the forbidden zone can be explained by the increase in concentration of neutral donors as a result of capture of the nonequilibrium electrons by ionized centers. The proposed model does not explain the absence of an additional absorption band connected with the transition to a higher excited state ($\nu=720\text{ cm}^{-1}$) or the nature of the weak band for $h\nu \approx 0.064$ electron volts.

1/1

1/2 026
UNCLASSIFIED
PROCESSING DATE--30OCT70
TITLE--LOW TEMPERATURE PHOTOLUMINESCENCE OF ALPHA SIC, 6H, SINGLE CRYSTALS
-U-
AUTHOR--(05)-LISITSA, M.P., KRASNOV, YU.S., ROMANENKO, V.F., REIFMAN, M.B.,
SERGEYEV, O.T.
COUNTRY OF INFO--USSR
SOURCE--OPT. SPEKTROSK. 1970, 28(3), 492-7
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHOTOLUMINESCENCE, LUMINESCENCE, SILICON, SINGLE CRYSTAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1998/0921

STEP NO--UR/0051/70/028/003/0491/0497

CIRC ACCESSION NO--AP0121523

UNCLASSIFIED

2/2 026

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0121523

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE LOW TEMP. (20DEGREESK)
PHOTOLUMINESCENCE OF THE ALPHA SIC (6H) SINGLE CRYSTALS ALLOYED WITH N
AND AL IS CHARACTERIZED BY THE PRESENCE OF TWO SERIES OF EMISSION BANDS
CORRESPONDING TO THE RECOMBINATION IN THE DONOR ACCEPTOR PAIR. THE
NEUTRAL N ATOM DOES NOT ACT AS THE CENTER OF THE RADIATIVE RECOMBINATION
IN SUCH CRYSTALS.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV79
TITLE--POLYTYPISM AND LOW TEMPERATURE PHOTOLUMINESCENCE OF SILICON CARBIDE
SINGLE CRYSTALS -U-
AUTHOR-(04)-LISITSA, M.P., KRASNOV, YU.S., SERGEYEV, O.T., TORCHUN, N.M.
CCOUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(4), 1290-2
DATE PUBLISHED-----70
SUBJECT AREAS--PHYSICS
TOPIC TAGS--LOW TEMPERATURE EFFECT, PHOTOLUMINESCENCE, SILICON CARBIDE,
SINGLE CRYSTAL
CENTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--2000/1259 STEP NO--UR/0181/70/012/004/1290/1292
CIRC ACCESSION NO--AP0124910
UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0124910

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. SPECTRA OF LOW TEMP.

PHOTOLUMINESCENCE WERE INVESTIGATED OF N TYPE CRYSTALS GROWN BY
SUBLIMATION AND DOPED WITH N IN CONC. OF 5 TIMES 10 PRIME17-2 TIMES 10
PRIME18 CM NEGATIVE PRIME3 AT 20 AND 77DEGREE SK. AT 20DEGREE SK THE
SPECTRUM OF EACH POLYTYPE (4H, 8H, 27H, 15R AND 21R) CONSISTS OF
OVERLAPPING BANDS. INCREASE IN TEMP. TO 77DEGREE SK DECREASES THE
INTENSITY OF LUMINESCENCE AND CAUSES THE APPEARANCE OF ADDNL. BANDS.
THE STRONGEST QUENCHING OF PHOTOLUMINESCENCE FOR ALL POLYTYPES OCCURS IN
THE INTERVAL 100-150DEGREE SK.

FACILITY: INST. POLUPROV., KIEV,
USSR.

UNCLASSIFIED

USSR

SERGEYEV, P., Professor, Director of the Chair of Molecular Pharmacology and Radiobiology, 2d Moscow Medical Institute imeni N. I. Pirogov, and SEYFULLA, R., Doctor of Medical Sciences

"Molecular Pharmacology"

Moscow, Meditsinskaya Gazeta, 14 Jun 72, p 3

Abstract: Various preparations, by acting upon cell membranes, can regulate most intracellular processes. Molecular pharmacology should reevaluate pharmacologically active substances and predict the possible mechanisms of their action, calculating the molecular orbits of pharmaceutical preparations and evaluating the reactive properties of individual atoms in their molecules. The most important cell structures upon which various therapeutic substances can act should be determined and the pharmacology of cytoplasmatic membranes and membranes of subcellular organelles investigated. Studies have demonstrated the possibility of identifying receptor molecules for pharmaceutical preparations and the fact that definite relationships can be established between the substance and a receptor. As a result, the active conformation of biomolecules can be altered and conditions produced for the activation or inhibition of enzymes. Learning to regulate the functional state of the genetic apparatus
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USSR

SERGEYEV, P., and SEYFULLA, R., Meditsin kaya Gazeta, 14 Jun 72, p 3

of cells and the synthesis of protein, DNA, and RNA in certain organs may lead to the prevention of many complications produced by medications. It is important to establish the effect of medicinal preparations on lysosomal enzymes and membranes in order to evaluate the metabolism process in the cell, since lysosomes play a most important part in the genesis of anaphylactic shock, various allergic reactions, inflammatory process, and so on. All tests in molecular pharmacology should be performed under laboratory conditions, lest the wrong conclusions be reached. Among the aims of molecular pharmacology are immunopharmacology, regulation of memory, and molecular aspects of the effect of radioprotectors and cytostatic preparations.

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SERGEYEV, P. V.

UDC 612.388-064.014.46:615.849.1.015.25/612.766.2
EFFECT OF RADIOPROTECTANTS ON THE FUNCTIONAL STATE OF HISTO-HEMATIC BARRIERS
IN RESTRICTED ANIMALS

Article by V. V. Sergeyev, V. S. Shashkov, P. V. Sergeyev, V. A. Chistyakov
and N. A. Sevdanetskiy. Moscow, Kosmicheskaya Biologiya i Meditsina, Russian,
Vol 6, No 1, pp 7-10, 1972, submitted for publication 15 March 1971

Abstract: The effect of mexamine and cystamine on the permeability of histo-hematic barriers in intact and restricted animals was studied. During the experiments rats were kept under hypokinetic conditions for 10 days. Intraperitoneal injections of radioprotectants increased substantially the 131-iodine permeability of tissue barriers in most organs and tissues. In response to an injection of radioprotectants during the 10-day hypokinetic experiment the label transfer through the hemato-encephalic barrier and tissue barriers of the femur and back muscles, thymus and adrenals increased to a lesser extent.

Hypokinesia causes a change in the biological tolerance of the body to exposure to a number of unfavorable environmental factors. For example, the results of investigations made by E. A. Lapsunov, V. A. Shkurba (1962, 1963), V. V. H. Seraya and I. A. Abukumova revealed a considerable decrease in the body tolerance to irradiation in animals which were totally or partially immobilized. In addition, there are indications that under the influence of weightlessness and restriction of motor activity there is a change in the intensity and direction of the effect of drugs (V. V. Porin, et al.; V. Ye. Belay and P. V. Vashil'ev). The system of histo-hematic barriers is one of the mechanisms ensuring the operation of the regulatory-protective function directed to the retention of homeostasis.

This paper is devoted to a study of the effect of radioprotectants on the permeability of tissue barriers in animals with restricted motor activity.

Method
The work was done using 125 sexually mature males of non-linear white rats weighing 170±10 g. Two series of experiments were carried out. In the

TPRS 55687
10 Apr 1972

USSR

UDC 612.438+612.13]:612.017.1

KOVALEV, I. Ye., SERGEYEV, P. V., and IMAMBAYEV, S. Ye., Second Moscow Medical
Institute imeni Pirogov

"The Blood' Thymus Barrier and Immunological Reactivity of the Organism"

Moscow, Zhurnal Mikrobiologii Epidemiologii i Immunobiologii, No 5, May 71,
pp 85-90

Abstract: Literature data on the morphology and function of the blood-thymus barrier are analyzed, and experimental results on this controversial problem are presented. Since intravenous injections of spleen homogenates from donor rabbits into rabbits which are recipients of skin grafts did not suppress tissue rejection but similar intrathymus injections did suppress the tissue rejection reaction, the conclusion is drawn that the thymus participates in immunological reactions. It was also concluded that antigens in sufficiently high concentrations penetrate the blood-thymus barrier.

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USSR

UDC 615.214.22.015:/612.824.1:612.388-064

KOMENDANTOVA, M. V., KRAVTSOVA, G. N., and SERGEYEV, P. V., Chair of Pharmacology, Moscow Medical Institute of Stomatology, and Chair of Molecular Pharmacology, Medico-Biological Faculty, 2nd Moscow Medical Institute imeni N. I. Pirogov

"The Effects of Chlorpromazine and Tizercine on the Permeability of the Hematoencephalic Barrier Under Normal Conditions and in Experimental Inflammation"

Moscow, Farmakologiya i Toksikologiya, Vol 35, No 1, Jan/Feb 72, pp 55-60

Abstract: The effects of the neuroleptics chlorpromazine and tizercine on the permeability of the hematoencephalic barrier under normal conditions and in experimental inflammation produced by a subcutaneous injection of a mustard suspension in sterile sunflower seed oil were studied in experiments on rats. ^{131}I -albumin derived from human serum albumin and uranine (Na-fluorescein) were used as tracers to determine the permeability of the barrier. The neuroleptics were administered in doses of 1 and 5 mg/kg. After a single administration of either neuroleptic, the permeability for ^{131}I -albumin increased. That for uranine decreased after a single administration of chlorpromazine and remained unchanged after a single administration of tizercine. On repeated administration of these drugs, the effect produced by them changed in a direction that

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USSR

KOMENDANTOVA, M. V., et al., Farmakologiya i Toksikolog ya, Vol 35, No 1, Jan/
Feb 72, pp 55-60

could be opposite to that produced by a single administration and that varied depending on the dose of the drugs. In experiments on the animals with inflammation, either drug produced a shift in the permeability to ^{131}I -albumin opposite to that produced by the inflammation - i.e., the drugs corrected the disturbances in the permeability of the hematoencephalic barrier that were due to the inflammation.

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USSR

UDC: 621.374

SVECHNIKOV, G. M., SERGEYEV, R. M., TREGUB, I. K.

"Pulse Circuits on Semiconductors and Ferrites"

Moscow, Impul'snyye skhemy na poluprovodnikakh i ferritakh (cf. English above), Voenizdat, 1972, 269 pp, ill. 1 r. (from RZh-Radiotekhnika, No 12, Dec 72, abstract No 12G184K [résumé])

Translation: The book examines principles of construction, physical processes and computational relations in pulse circuits on semiconductor devices and ferrites; examples of calculation of fundamental types of circuits are presented. The book is a text for radio officers, and also for students of intermediate and higher military educational institutions.

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Pulse Technique

USSR

UDC: 621.374:621.382.2/.3

SVECHNIKOV, G. M., SERGEYEV, R. M., and TREGUB, I. K.

"Impul'snyye skhemy na poluprovodnikakh i ferritakh" (Pulse Circuits Using Semiconductors and Ferrites) Moscow, 1972, 272 pp

Abstract: The purpose of this book is to present information, both qualitative and quantitative, on pulse circuitry involving semiconductors and ferrites. In the process of the exposition, a good many design and computational formulas relating to these circuits are derived. The accent of the book is primarily on the practical, with little attention given to the physical or chemical theory of the semiconductors or ferrites figuring in it.

It is divided basically into four chapters. The first is concerned with transistor pulse circuits, the second with pulse circuits with negative-resistance elements, the third with pulse circuits involving ferrite cores and semiconductors, and the fourth with combination logic circuits of the NOT, AND, and OR type.

A bibliography of 47 titles is appended.

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USSR

SVECHNIKOV, G. M., SERGEYEV, R. M., and TREGUB, I. K.

"Impul'snyye skhemy na poluprovodnikakh i ferritakh" (Pulse Circuits Using Semiconductors and Ferrites) Moscow, 1972, 272 pp, p 3)

Translation:

FOREWORD

Because of the broad application of semiconductor and ferrite pulse systems in electronics, a need for literature on such circuits has risen and grown.

This book considers the principles of the structure, physical processes, and basic computational relationships in pulse circuits using semiconductor devices and ferrites, and offers examples of design of basic circuit types.

It is a textbook for radio officers and is also meant for students of intermediate and advanced military schools.

Chapter 1 was written by I. K. Tregub; Chapters 2 and 4, except for Articles 5 and 6, were written by G. M. Svechnikov; Chapter 3 and Articles 5 and 6 of Chapter 4 were written by R. M. Sergeyev.

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USSR

SVECHNIKOV, G. M., SERGEYEV, R. M., and TREGUB, I. K.

"Impul'snyye skhemy na poluprovodnikakh i ferritakh" (Pulse Circuits Using Semiconductors and Ferrites) Moscow, 1972, 272 pp, pp 268-269

Translation:

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Foreword	
Chapter 1. <u>Transistorized Pulse Circuits</u>	
Article 1.1. Transistor switching characteristics . . .	
1.2. Limiter-amplifiers	
1.3. Regenerative pulse circuits.	
1.4. Multivibrators	
1.5. Delayed multivibrators	

3/7

1/2 013 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--EVALUATION OF THE DESIGNS OF PNEUMATIC FLOTATION MACHINES -U-
AUTHOR--(03)-MAKOVSKIY, N.D., SERGEYEV, S.F., CHICHVAROV, V.M.
COUNTRY OF INFO--USSR
SOURCE--TSVET. METAL. 1970, 43(4), 82-5
DATE PUBLISHED-----70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, EARTH SCIENCES AND
OCEANOGRAPHY
TOPIC TAGS--PNEUMATIC DEVICE, FLOTATION, COPPER ORE, PRODUCTION
EFFICIENCY, ORE BENEFICATION EQUIPMENT
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3004/1906 STEP NO--UR/0136/70/043/004/0082/0085
CIRC ACCESSION NO--AP0132168
UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132168

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN EXPTL. MODEL OF A PNEUMATIC FLOTATION MACHINE (A) OF CHAMBER VOL. 1.6 M PRIME3 AND DEPTH 760 MM IS COMPARED WITH A STANDARD MECH. FLOTATION MACHINE (B). IN ALL CASES, THE EXTN. OF CU WAS GREATER IN A THAN IN B. THE PRODUCTIVITIES OF A AND B WERE 5-6.5 AND 2.5-3.0 M PRIME3-MIN, RESP. THE CU CONTENT OF THE TAILINGS WAS 0.05-0.13PERCENT LOWER, THE CU CONTENT OF THE UNCENTRATE WAS 0.35-1.35PERCENT LOWER, AND THE EXTN. WAS 2.5-9.0PERCENT HIGHER IN A THAN IN B. THE USE OF A INNUMEROUS FACTORIES IN PLACE OF CONVENTIONAL FLUTATION MACHINES SHOWS THAT THE FLOTATION RATE CAN BE INCREASED ON THE AV. BY 40PERCENT, AND THAT THE ENERGY CONSUMPTION CAN BE REDUCED BY 30-5PERCENT.

UNCLASSIFIED

D. Programming and Mathematical Machine Theory

USSR

KORNEV, Yu. N., PISKUNOV, S. V., SERGEYEV, S. N.

"Microprogrammed Homogeneous Processor Oriented to Linear Algebra Problems"

Sb. Tr. In-t Mat. Sib. Otd. AN SSSR [Collected Works of Institute of Mathematics, Siberian Division, Academy of Sciences, USSR], 1972, No 6(23), pp 34-64 (Translated from Referativnyy Zhurnal Kibernetika, No 4, 1973, Abstract No 4V612, by the authors).

Translation: The logical plan of a processor for solution of linear algebra problems is described. The plan of the processor is a practical example of construction of a homogeneous computer device which operates algorithms of generalized permutation. The operation of the processor is illustrated on the example of an algorithm for solution of a problem of linear programming. Analysis of the example showed the effectiveness of generalized permutation algorithms as an algorithmic language: the programs produced are short and rather effective (as to number of cycles), requiring almost no restructuring of files.

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USSR

UDC 8.74

KORNEV, YU. N., PISKUNOV, S. V., SERGEYEV, S. N.

"IP-I Language (Complete Description)"

V sb. Vychisl. sistemy (Computation Systems -- collection of works), vyp. 47, Novosibirsk, 1971, pp 131-159 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V593)

Translation: The IP-I language is a programming language designed for word conversion in an arbitrary alphabet.

With respect to the carrier, the language is oriented toward computers with homogeneous structure and homogeneous networks of finite automata: iterative circuits, computation media, and so on.

The dynamic structure of the program is characteristic of the language. The belonging of a word in the program to one syntactic formation or another (and, consequently, its interpretation) is determined by what subword of the program is being examined by the executive program at the given point in time, and it depends on the states of the program at the preceding points in time.

Just as in COMMIT, SNOBOL, (SNOBOL-3), in IP-I the basic means of word transformation is the substitution operation.

1/1

USSR

UDC: 577.4

KORNEV, Yu. N., PISKUNOV, S. V., SERGEYEV, S. N.

"Problems of Constructing Algorithms of Generalized Substitutions With an Isolated Context"

V sb. Vychisl. sistemy (Computer Systems--collection of works),
vyp. 47, Novosibirsk, 1971, pp 117-130 (from RZh-Kibernetika,
No 8, Aug 72, Abstract No 8V431)

Translation: The paper continues further investigation of algorithms of generalized substitutions (see RZhMat 1972, 5V318). Generalized substitutions are treated as mappings defined on a set of cellular sets. An investigation is made into questions of constructing more complex algorithms from given simple ones: compositions and conditional branchings of algorithms of generalized substitutions.

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Computers: Applications & Programming

USSR

UDC 3.74

KORNEV, YU. N., PISKUNOV, S. V., and SERGEYEV, S. N.

"JP-i Programming Language for Problems of Processing Arbitrary-Alphabet Words"

V sb. Vychisl. sistemy (Computational Systems -- Collection of Works), vyp. 41, Novosibirsk, 1971, pp 98-112 (from RZh-Matematika, No 5, May 72, Abstract No 5V506 by V. MIKHEYEV)

Translation: The article describes the basic features of the JP-1 algorithmic programming language, intended for converting arbitrary-alphabet words. As far as the carrier is concerned, the language is oriented towards machines with homogeneous structure and towards homogeneous networks of finite automata; iterative networks, computer media, etc. Single-symbol names have been adopted in the language in order to make interpretation and syntax-checking simple and fast. Language operators are the following: reset statement, conditional statement, read statement, transcribe statement, clear statement, end statement. Numerous examples are given of the working of these operators. It is noted that in order to check the basic properties and performance of the principal aids of the language, a mathematical model was constructed for realization of the language by a homogeneous chain of automata. This model takes the form of a program in BESM-6 codes and is the interpreter of the JP-1 language.

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USSR

UDC: 8.74

KORNEV, Yu. N., PISKUNOV, S. V., SERGEYEV, S. N.

"The JP-I Language for Programming Problems of Word Processing in an Arbitrary Alphabet"

V sb. Vychisl. sistemy (Computer Systems--collection of works), vyp. 41, Novosibirsk, 1971, pp 98-112 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V506)

Translation: The paper describes the principal features of the JP-1 algorithmic programming language for word transformation in an arbitrary alphabet. With respect to the medium, the language is oriented for computers with homogeneous structure and for homogeneous networks of finite automata: iteration networks, computer media, etc. Single-symbol nouns are used in the language to make interpretation and syntactic check quick and simple. The operators of the language are: substitution operator, condition operator, read operator, rewrite operator, clear operator and end operator. Numerous examples are given of the operation of these operators. It is noted that a mathematical model of realization of the language by a homogeneous chain of automata has been constructed for checking the principal properties and working out the basic media of the language. This model takes the form of a program in BESM-6 codes and is an interpreter of the JP-1 language. V. Mikheyev.

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USSR

UDC: 681.3.06:51

KORNEV, Yu. N., PISHKUNOV, S. V., SERGEYEV, S. N.

"Algorithms of Generalized Substitutions and Problems of Their Interpretation"

V sb. Teor. kibernetika. Vyp. 4 (Theoretical Cybernetics--collection of works, No 4), Kiev, 1970, pp 3-20 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V702)

Translation: Formal rules are given for recording algorithms in the form of substitutions defined on a set of generalized words. A generalized word is taken to mean a finite set of named cells in each of which is recorded a symbol from some alphabet called the alphabet of states of the cell. The rules for carrying out the algorithms allow simultaneous application of the substitutions of the algorithm to the word to be processed. Consideration is given to problems involving recognition of the noncontradiction of systems of generalized substitutions, and to problems of interpretation of one class of algorithms with the aid of networks of automata.

1/1

UDC: 577.4

USSR

KORNEV, Yu. N., PISKUNOV, S. V., and ~~SERGEYEV, S. N.~~

"Problems of Constructing Algorithms for Generalized Substitutions
With Context Separation"

Novosibirsk, V sb. Vychisl. sistemy (Computer Systems--collection
of works) No 47, 1971, pp 117-130 (from RZh--Matematika, No 8,
1972, Abstract No 8V431)

Translation: The investigation of algorithms of generalized substitution is continued (see RZhMat, 1972, 5V318). Generalized substitutions are considered as representations defined in a set of cellular sets. An investigation is made of the problems of constructing more complex algorithms from simple data: the composition and conditional branching of algorithms of generalized substitutions.

1/1

SERGEYEV, V.

author

SPRS 55656
7 APRIL 1979

SUMMARY OF ANNUAL MEETING OF UZBEK ACADEMY OF SCIENCES
Article by Ye. V. Sergeyev and V. Sergeyev, Correspondents, Uzbek Telegraph
Agency Tashkent, Pravda Vostoka, Buz'dan, 26 March 1972, p. 1.]

One hundred fifty problems, over 400 topics -- the year of work and creativity of the Uzbek Academy of Sciences can be so described in the most condensed form. It was a remarkable year, a year worthy of the first congress -- the year in which -- as Leonid Il'ich Brezhnev stated at the 24th Party Conference -- the role of science as a direct productive force will increasingly be manifested.

The task of the scientist and the task of the scientific collective is to be equal to the era, to be equal to the goals of the revolution in science and technology. This criterion was the basis for the evaluation in science that were discussed on 25 February at the annual General Meeting of the Academy of Sciences of the Uzbek SSR.

The meeting was opened with an introductory address by A. N. Sal'nikov, Corresponding Member of the USSR Academy of Sciences, President of the Uzbek Academy of Sciences.

A report on the scientific and scientific-organizational activity of the Uzbek Academy of Sciences during 1971 and on the plan of problems and topics for 1972 was presented by M. Z. Khimichukhovich, a member of the academy presidium.

Even the most condensed survey of the activity of the academy and its institutions indicates the breadth and purposefulness of its research. This year brought enrichment to the theoretical foundation of science and many valuable decisions, conclusions, and recommendations. It is the growth of social labor productivity and the flourishing of socialist culture.

PROCESSING DATE--27NOV70

1/3 045
TITLE--METEOROLOGICAL EYE OVER THE PLANET -U-
UNCLASSIFIED

AUTHOR--SERGEYEV, V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, NTO-SSSR, 1(133), 1970, PP 22-24

DATE PUBLISHED-----70

SUBJECT AREAS--METHODS AND EQUIPMENT, ATMOSPHERIC SCIENCES, SPACE
TECHNOLOGY

TOPIC TAGS--METEOROLOGIC SATELLITE, SPACEBORNE ATMOSPHERIC PHOTOGRAPHY,
CLOUD COVER, CAMERA, COMMAND SYSTEM/(U)METEOR METEOROLOGIC SATELLITE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3008/0383

STEP NO--UR/0309/70/000/000/0022/0024

ATC ACCESSION NO--AP0137483

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137483

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE "METEOR" SATELLITE SYSTEM IS A COMBINATION OF TWO TO FOUR ARTIFICIAL EARTH SATELLITES. THEY REVOLVE AROUND THE PLANET WITH AN INCLINATION TO THE EQUATORIAL PLANE OF 81 DEGREES, AT ONCE INSPECTING A STRIP A THOUSAND KILOMETERS WIDE. ONE REVOLUTION REQUIRES 1 ONE HALF HOURS. EACH METEOROLOGICAL SATELLITE IS A HOLLOW CYLINDER WITH PANELS OF SOLAR CELLS. AT LAUNCHING THEY ARE TIGHTLY FOLDED AGAINST THE CONTAINER BUT AS SOON AS IT IS SEPARATED FROM THE CARRIER ROCKET THE PANELS OPEN UP, EXPOSING SEMICONDUCTOR ROWS OF CELLS TO THE SUN'S RAYS. THE SEALED CONTAINER HAS TWO COMPARTMENTS: THE LOWER ONE CONTAINS METEOROLOGICAL INSTRUMENTATION AND THE UPPER ONE CONTROL INSTRUMENTS. BOTH COMPARTMENTS ARE CONNECTED TO GROUND STATIONS. DATA ARE REGISTERED ON PHOTOGRAPHIC AND MAGNETIC FILM; THEY ARE PROCESSED AND TRANSMITTED TO THE HYDROMETEOROLOGICAL CENTER IN MOSCOW. THE TELEVISION APPARATUS PHOTOGRAPHS CLOUD COVER, SNOW AND ICE COVER ON THE DAYTIME, ILLUMINATED SIDE OF THE PLANET. THE SAME IS DONE BY IR APPARATUS ON BOTH THE DAYTIME AND NIGHTTIME SIDES. ACTINOMETRIC INSTRUMENTS REGISTER THE INTENSITY OF RADIATION REFLECTED AND RADIATED BY THE EARTH AND ITS ATMOSPHERE AND CAN DETERMINE THE TEMPERATURE OF CLOUDS AND THE EARTH'S SURFACE. ALL COLLECTED DATA ARE STORED ON BOARD AND TRANSMITTED TO EACH BY COMMAND. DUE TO RIGID TRIAXIAL ORIENTATION THE INSTRUMENTS MAKE OBSERVATIONS ALONG THE ENTIRE FLIGHT PATH. THIS FACILITATES GEOGRAPHIC TIE IN OF THE COLLECTED DATA, THEIR PROCESSING AND INTERPRETATION. TWO CAMERAS TAKE PHOTOGRAPHS AT THE SAME TIME: ON TO THE RIGHT AND ONE TO THE LEFT, WITH A SLIGHT OVERLAP.

UNCLASSIFIED

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PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137483

ABSTRACT/EXTRACT--INFRARED INSTRUMENTS OF THE TELEVISION TYPE, SENSITIVE TO THE FLUX OF RADIATION EMITTED BY CLOUDS AND THE EARTH'S SURFACE, ALSO MAKES IT POSSIBLE TO DETECT A CLOUD COVER. THE RADIATION DETECTOR, WITH A SCANNING MOTION PERPENDICULAR TO THE ORBITAL PLANE, INSPECTS THE ZONE AND DETECTS TEMPERATURE CHANGES OF ONLY A FEW DEGREES. A PROGRAMMING DEVICE AUTOMATICALLY SWITCHES THE METEOROLOGICAL INSTRUMENTS ON AND OFF. ALL THIS CAN BE CHANGED BY COMMAND FROM GROUND STATIONS. ACTINOMETRIC MEASUREMENTS ARE VERY IMPORTANT. THEY MAKE IT POSSIBLE TO STUDY THE PROPERTIES OF CLOUDS AND THE EXPOSED SURFACES OF THE OCEANS AND CONTINENTS AND ALSO TO DETERMINE COMPONENTS OF HEAT BALANCE OF THE EARTH ATMOSPHERE SYSTEM. AMERICAN SATELLITES FOR A LONG TIME DID NOT CARRY SUCH INSTRUMENTS, MAKING IT IMPOSSIBLE TO CROSS CHECK DATA ON THE RADIATION BALANCE, VERY IMPORTANT IN BOTH LONG AND SHORT RANGE FORECASTING. "METEOR" PHOTOGRAPHS ARE MAKING IT POSSIBLE TO MAP THE DISTRIBUTION OF ICE AROUND ANTARCTICA, MAKE MORE PRECISE DETERMINATIONS OF THE ICE COVERAGE OF ARCTIC SEAS AND TO DETERMINE THE EXTENT OF THE SNOW COVER IN THE TIEN SHAN, THEREBY MAKING IT POSSIBLE TO ESTIMATE THE MOISTURE RESERVES AVAILABLE FOR THE IRRIGATION SYSTEMS OF CENTRAL ASIA. SOVIET VESSELS, PRIOR TO SETTING SAIL, CONSULT THE HYDROMETEOROLOGICAL CENTER FOR OBTAINING METEOROLOGICALLY SAFE TRACKS SO AS TO AVOID STORMS AND HURRICANES. SATELLITES GUIDE SHIPS ALONG THE NORTHERN SEA ROUTE.

UNCLASSIFIED

SEERGEYEV V.A.

Acc. Nr.

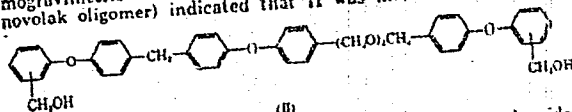
AP0045174

Abstracting Service:
CHEMICAL ABST.

5-70

Ref. Code
UR0091

90896k Oxygen-containing oligomers based on diphenyl oxide. Novoseltsev P. V.; Zaslava V. A.; Korshak V. A.; Kul'kova, I. A.; Salamatova V. A.; Sergeev V. A. (USSR). *Fizst. Massy* 1970, (1), 9-11 (Russ). The polycondensation of Ph₂O with HCHO in glycerol (I), EtOH, AcOH, and AcOEt in the presence of H₂SO₄ was studied. Optimum reaction conditions were: Ph₂O-HCHO-H₂SO₄-solvent ratio = 1:2:0.1:0.2; reaction temp., 100°; reaction time, 10 hr. Best results were obtained in AcOH, EtOH, and I. The polycondensation gave a yellow viscous product, tentatively assigned the structure II. Thermogravimetric tests of II and Iditol (a thermoplastic novolak oligomer) indicated that II was more resistant to oxida-



tive thermal degradation, presumably due to inhibited oxidn. of the CH₂ bridge in II. CKJR

REEL/FRAME
19780074

USSR

UDC 619:573.085.23-576.858.27

RUDOBEL'SKIY, E. V., SERGEYEV, V. A., and POPOV, V. I., All-Union Scientific Research Institute of Veterinary Virology and Microbiology

"Accumulation of Hog Cholera Virus in Cell Cultures"

Moscow, Veterinariya, No 6, Jun 71, pp 38-40

Abstract: The production of large amounts of cell cultures and subcultures of testicular tissue from lambs and the accumulation of attenuated hog cholera virus strains in these cultures is described. Tissue from the testicles of 1-3 month old lambs was taken, ground and treated with trypsin. The cell suspensions obtained were decanted into a vessel containing calf serum and kept there at a temperature of 4°C for trypsin treatment. The cell suspensions were precipitated by centrifugation. The LK (lapinized strain K) and AK (attenuated strain K) of hog cholera virus were used, as well as forms adapted to cell culture (in 26 and 47 passages, respectively). Some 10 ml of the virus medium was introduced into the cell culture, the mixture was kept for 2 hours at 37°C, then treated with 190 ml of 0.5% hydrolyzate of lactalbumin in Hanks salt solution, with 4% lamb serum (pH 7.6). Virus accumulations were determined after 3, 7, 9, and 11 days on piglets which had not been immunized

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USSR

RUDOBEL'SKIY, E. V., et al, Veterinariya, No 6, Jun 71, pp 38-40

against hog cholera. It was found that optimum conditions for cultivation were division by a factor of 8-12 of cells from testicular lamb tissues. Such a culture was best for accumulation of attenuated variants of hog cholera virus. The vaccination variant LK and the attenuated variant AK accumulated in a titer of 10^{-5} per ml of medium after 3 days of culture. Further reproduction of the virus is limited by the accumulation of interfering substances in the culture.

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- 91 -

UDC 619:616.988.43-094:576.8

USSR

UBRANTSEV, N. M., SYUSYUKIN, A. A., SERGEYEV, V. A., and PROKHOROV, V. V.,
All Union Scientific Research Foot-and-Mouth Disease Institute and All Union
Scientific Research Institute of Veterinary Virology and Microbiology

"The Effect of the Passaging Temperature on Properties of Attenuated Foot-
and-Mouth Disease Virus"

Moscow, Veterinariya, No 1, Jan 71, pp 37-39

Abstract: The epizootic strain (No 663) of A₂ foot-and-mouth disease virus was passaged in a culture of calf kidney cells 5 times at 37°C and 84 times at 24°C. The population and clonal lines of virus passaged 5 times at 37°C were pathogenic for mice and guinea pigs, capable of replicating at 37°C and 40°C, and had no cytopathic activity at 40°C. However, by the 84th passage at 24°C the virus was incapable of replication at 40°C, and several clones did not replicate at 37°C. After the virus was successively passaged at 30°C (30 times), 34°C and 37°C (10 times each) it gradually regained its lost properties, but could not replicate at 40°C. Thus, passaging foot-and-mouth disease virus at low temperatures and then culturing it at high temperatures produced attenuated variants with the properties of vaccine strains.

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Veterinary Medicine

UDC 576.858:591.2

USSR

SERGEYEV, V. A., Doctor of Biological Sciences, ORLYANKIN, B. G., and MAKAROV, V. V., Candidates of Biological Sciences, All-Union Scientific Research Institute of Veterinary Virology and Microbiology

"The Effects of Culture Temperature on Replication of Aujeszky's and Newcastle Disease Viruses"

Moscow, Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh Nauk imeni V. I. Lenina, No 11, 1971, pp 44-45.

Abstract: Virulent and attenuated strains were grown in chick embryo medium at various temperatures. Growth was fastest at temperatures ranging from 31 to 40°C. No growth was recorded at 24 and 42°C. The growth rate was slow at 28 to 30°C. The thermal sensitivity of the three types of viruses studied is expressed in figures representing (in proper order) the optimum temperature yielding maximum growth and the suboptimum and supraoptimum temperatures causing 90 percent inhibition of growth: attenuated Aujeszky's disease virus -- 37, 30, and 40°C; virulent Aujeszky's disease virus -- 40, 32.5, and 41.5°C; and Newcastle disease virus -- 39, 33, and 39.5°C.

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UDC 619:616.981.452:636.4

USSR

KUSHNIR, A. T., BURTSEV, V. I., BONDARENKO, I. M., ZHOGOLEVA, S. P.,
SERGEYEV, V. A., FISENKO, O. F., ORLOV, V. A., and TROYAN, M. D., All
Union Scientific Research Institute of Veterinary Virology and Micro-
biology

"Aerosol Vaccination of Swine Against Swine Fever"

Moscow, Veterinariya, No 10, Oct 70, pp 50-52

Abstract: Cultural vaccine prepared from the 31st passage of the lapinized K strain of swine fever virus in a culture of lamb testicular cells and concentrated 10-fold was highly immunogenic in gilts and piglets vaccinated by the aerosol method. Exposure of the animals for 5 minutes to vaccine diluted 1:1000 with physiological solution conferred stable immunity on 50% of the gilts and 100% of the piglets. Even in a dilution of 1:10,000, the vaccine produced immunity in a number of the animals. The immunizing dose (ImD_{50}) of the vaccine applied via aerosol was equivalent to 7.25 intramuscular ImD_{50} for gilts and 5.25 ImD_{50} for piglets. Clinical-hematological and biochemical studies of the vaccination process showed that the time at which the immunological reaction occurred and its intensity were the

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USSR

KUSHNIR, A. T., et al, Veterinariya, No 10, Oct 70, pp 50-52

same, regardless of the method of vaccination. The degree of decrease in immunogenic activity of the vaccine in the process of atomization was less than 54.2% for one of the vaccines tested.

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UDC 619+576.8.094.29

USSR

SYUSYUKINA, M. S., SYUSYUKIN, A. A., SERGEYEV, V. A., and
KALUGINA, T. Ye., All Union Scientific Research Institute of
Foot-and-Mouth Disease

"Culturing Foot-and-Mouth Disease Virus in VNK-21 Kidney Cells
of Immune Animals"

Moscow, Sel'skokhozyaystvennaya Biologiya, Vol 6, No 1, 1971,
pp 136-138

Abstract: The possibility of culturing foot-and-mouth disease virus in monolayer cultures and in suspensions of kidney cells of immune cattle was studied. For this purpose cows which had recovered from the disease, vaccinated cows, and control cows were used as donors of cells on which laboratory strains of A₂₂ and C viruses were cultured. Viruses grew equally well on kidney cell layers and on cell suspensions regardless of whether the donor was or was not immune to foot-and-mouth disease. The final concentration of viruses in the media was approximately the same, and their immunogenic properties were practically identical.

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UDC 619.616.575.858.1

USSR

SHIDKOV, S. A., SERGEYEV, V. A., TRUBITSYN, B. I., and URVANTSEV, N. M.,
All Union Scientific Research Institute of Veterinary Virology and Micro-
biology

"Characteristics of a Cold Variant of Foot-and-Mouth Disease Virus (Type 0)"

Moscow, Veterinariya, No 10, Oct 71, pp 42-44

Abstract: An earlier study showed that passaging foot-and-mouth disease virus (type 0, strain Or-13) in a culture of calf kidney cells at 24°C resulted in its attenuation. Further study revealed that elevation of the temperature led to restoration of the lost properties, the sequence and intensity of which were determined by the temperature. Virus cultured at 30°C became pathogenic for mice and mildly pathogenic for guinea pigs and swine. It had no effect on cattle, could not be transmitted to calves by contact, and produced virtually no immunity. Virus cultured at 34°C became more pathogenic for guinea pigs and swine and caused atypical lesions on the oral mucosa, could be transmitted to cattle by contact but not to swine, and produced marked immunity in cattle and sheep. Virus grown at 37°C produced even stronger immunity and could be transmitted by contact

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USSR

SHIDKOV, S. A., et al, Veterinariya, No 10, Oct 71, pp 42-44

to swine from vaccinated swine and calves. Virus grown at 39°C was able to replicate. The resistance of the cold variant to heating was not affected by elevation of temperature.

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USSR

SOKOLOV, V. I., ZHESTEREV, V. I., Candidate of Biological Sciences, ~~SERGEYEV, V. A.~~, Doctor of Biological Sciences, TETERINA, A. V., Candidate of Biological Sciences, and KADETOV, V. N., All Union Scientific Research Institute of Veterinary Virology and Microbiology

"Automated Apparatus for Laboratory Cultivation of Animal Cells in Suspension"

Moscow, Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh Nauk imeni V. I. Lenina, No 8, 1971, pp 40-42

Abstract: An automatically monitored apparatus in which suspensions of animal cells can be cultivated according to all known techniques was designed and built. The apparatus consists of four units: a cultivation block, a gas supply system, a cooling chamber, and a control and recording panel. The cultivation block is a thermostatically controlled water container in which flasks of various sizes and shapes are immersed half-way. Rods, tubes, and needles installed in air-tight stoppers facilitate addition and withdrawal of cells and reagents as well as recording of various parameters. Cells are introduced by means of compressed air and sampled using a vacuum. In the gas supply system, tanks with various gases are attached to a control pannel which selects the appropriate gas and controls its flow between 2
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USSR

SOKOLOV, V. I., et al., Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokh-
ozyaystvennykh Nauk imeni V. I. Lenina, No 8, 1971, pp 40-42

and 60 liters per hour. Temperature, pH, and other parameters are automati-
cally adjusted and recorded. Optical density of the cell suspension is also
recorded. Prior to each experiment, the apparatus must be thoroughly washed,
sterilized, assembled, and calibrated. This takes 2.5-3 hours, which are
subsequently more than regained through the automatic control. In test runs,
cell growth was better than in the older semi- and nonautomated apparatuses.

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Molecular Biology

UDC 576.858:615.28

USSR

ORLYANKIN, B. G., KOSHELEVA, R. V., SERGEYEV, V. A., Doctor of Biological Sciences, and MAKAROV, V. V., Candidate of Biological Sciences (Communicated by KOVALENKO, Ya. R.), All-Union Research Institute of Veterinary Virology and Microbiology

"The Effects of Inhibitors of Macromolecular Synthesis on the Reproduction of Aujeszky's Disease Virus"

Moscow, Doklady Vsesoyuznoy Ordena Lenina Akademii Sel'skokhozyaystvennykh Nauk imeni V. I. Lenina, No 2, 1973, pp 35-36

Abstract: Since little information is available on the effects of various antimetabolites and antibiotics on the multiplication of Aujeszky's disease virus (ADV), studies were undertaken to determine the effects of 5-bromo-2-deoxyurine (BDU) (100 μ g/ml), mitomycin C (5 μ g/ml), aurantin (an unpurified preparation of actinomycin D, 0.1 μ g/ml), puromycin (1 μ g/ml) and cyclohexanide (10 μ g/ml) on the reproduction of ADV in chick embryo tissue culture. Each preparation was found to significantly inhibit viral replication during the latent period. If administered after 8 h (6 h in the case of BDU), no inhibition was obtained since the synthesis of the viral building blocks had been completed.

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USSR

UDC 612.822.3

SERGEYEV, V. I. and GUSEL'NIKOV, V. I., Chair of Higher Nervous Activity,
Moscow State University imeni M. V. Lomonsov

"A Multi-Channel Biotelemetry System for Transmitting the Bioelectrical
Activity of the Brain"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23,
Vyp 5, Sep/Oct 73, pp 1,088-1,092

Abstract: A multi-channel biotelemetry system capable of transmitting and reproducing cerebral electrical activity of rabbits, cats, dogs, turtles and birds is described. The system has the capacity for multi-channel transmission with frequency and amplitude modulation of from one to three signals, to a distance up to 70 m. The biotelemetric receiver, developed in the authors' laboratory, is a three-channel superheterodyne. Modular construction was used for the transmitter, including the biopotential amplifier, the subcarrier frequency generator and the high-frequency generator. The system has been tested on rabbits and cats.

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UDC 678.01:620.17:627.039

USSR

~~SERGEYEV, V. I.~~, DEYEV, Yu. S., KRUGLYY, M. S., and
~~SIRENKOV, V. I.~~, Scientific Research Institute of Plastics,
Moscow

"A Test Unit of Polymers by Irradiation Effect"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8,
No 1, 1972, pp 87—89

Abstract: The construction and operation of a test unit for polymers is described by reference to its schematic drawing. The unit is designed for carrying out tensile and creep tests and studying the stress relaxation by tension of polymers under vacuum and ionizing irradiation conditions in a wide temperature interval. The unit is mounted on the base of a linear electron accelerator with 5 Mev energy of accelerated electrons and their 50 μ A average and 75 mA pulse current. Some preliminary investi-

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USSR

SERGEYEV, V. I., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 8,
No 1, 1972, pp 87-89

gation results, stress relaxation curves, of mechanical properties of polytetrafluoroethylene subjected to the action of fast electrons show that the relaxation of mechanical properties proceeding in polytetrafluoroethylene is considerably intensified by irradiation and, therefore, an increase of the creeping rate can be anticipated. Two illustr., eight biblio. refs.

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- 175 -

UDC 534.322.3+534.83

USSR

BALITSKIY, F. YA., GENKIN, M. D., ~~SERGEYEV, V. I.~~

"Problems in the Acoustical Diagnostics of Machines"

V sb. Dinamika i akustika mashin (Machine Dynamics and Acoustics -- Collection of Works), Moscow, "Nauka", 1971, pp 109-116 (from RZh-Fizika, No 3, Mar 72, Abstract No 3Zh505)

Translation: Several models of diagnosable systems are discussed: in particular, a model in the form of an n -pole with one (acoustical) output. It is shown that to solve the diagnostics problem of determining the state of the machine, it is necessary to know (on the basis of preliminary study) the correspondence between the parameters of the technical state and the parameters of the acoustical signal. Problems of technical diagnostics are considered as applied to such kinematic parameters as gear trains, bearings, and a piston-cylinder. Possible ways of developing acoustical diagnostics from the aspect of a directed search for most informative signs, the application of computers, and other means are discussed. 43 ref. Authors abstract.

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UDC 621.385.006:658.274

USSR

SOKOLOV, V. S., SERGEYEV, V. I.

"AZ-5 Photoelectric Counter of Aerosol Particles"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue No 10, pp 92-100 (from RZh-Elektronika i yeye primeneniye, No 2, February 1971, Abstract No 2A121)

Translation: The AZ-5 photoelectric counter of aerosol particles is intended for measurement of the concentration of dust particles with a diameter of $0.4 \div 10$ micrometers in the air of industrial sites. The counter is portable, simple in operation, and economical, assuring the possibility of uninterrupted inspection of the cleanness of the air in the ranges 0-1000, 0-3000, 0-10,000, 0-30,000, 0-100,000, and 0-300,000 particles/l, and the lines of batching inspection -- in the range of 0-250 particles/l. The analysis time for one liter of aerosol is 50 seconds. The electrical supply of the device is effected either from an a-c net with a 220 v (plus or minus 10%) of 50-60 Hz frequency, or a

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USSR

SOKOLOV, V. S., et al, Elektron. tekhnika. Nauchno-tekhn. sb.
Elektron. SVCh, 1970, Issue No 10, pp 92-100

source of 12 v ($11 \div 14$ v) d-c voltage. The power consumed is ≤ 30 w with supply from the a-c net and ≤ 20 w with supply by the d-c. The dimensions are 305 x 320 x 180 mm. The weight is 8 kg. During operation the counter practically does not require time for warmup. 4 ill., 4 ref. G.B.

2/2

- 32 -

1/2 022
TITLE--USE OF THE AI-256 ANALYZER FOR PROCESSING OF BIOELECTRICAL SIGNALS
-U-
AUTHOR--SERGEEV, V.I.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, BIOLOGICHESKIYE NAUKI, NO 2 (74, 1970, PP 113-115
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--ELECTROPHYSIOLOGY, SIGNAL ANALYSIS, MEDICAL APPARATUS/(U)AI256
ANALYZER
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/1334
CIRC ACCESSION NO--AP0121827
UNCLASSIFIED
PROCESSING DATE--30OCT70
STEP NO--UR/0325/70/000/000/0113/0115

UNCLASSIFIED

PROCESSING DATE--30OCT70

2/2 022

CIRC ACCESSION NO--AP0121827

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A METHOD OF UTILIZING THE AI-256 ANALYZER, CURRENTLY USED IN PHYSICAL INVESTIGATIONS, TO DETERMINE AMPLITUDE AND TIME OF IMPULSES IS SUGGESTED. THE AI-256 IS CONVERTED, THROUGH COMPLICATED RESTRUCTURING OF THE FUNCTIONAL PARTS, ALTERING THE TIME INTERVAL MECHANISM AND THE WIRING SYSTEM, TO MAKE IT SUITABLE FOR HISTOGRAM REGISTRATION.

UNCLASSIFIED

USSR

UDC 533.601.16:533.9

SERGEYEV, V. L., BEZLADNOV, G. M., LYASHKEVICH, V. D.

"Experimental Study of Heating of Blunt Body by a Plasma Stream"

Minsk, Inzhenerno-Fizicheskiy Zhurnal, Vol. 20, No. 4, Apr. 71, p. 622-627.

Abstract: This paper presents the results of measurement of the heat flux from a high temperature gas jet to a blunt body in the area of the stagnation point as a function of blunt radius, top angle of cone body, pressure and stagnation enthalpy. A generalized formula is produced, relating the heat flux to the parameters mentioned. The results of measurements performed with an electric arc heater agree well with measurements made in shock tubes.

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USSR

UDC: 536.2

LAGAR'KOV, A. N., SERGEYEV, V. M., Institute of High Temperatures of the Academy of Sciences of the USSR

"Infinitesimal Canonical Transform for Obtaining the Coefficient of Thermal Conductivity in the Theory of Linear Response"

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 2, Mar/Apr 73, pp 233-237

Abstract: Linear response theory gives expressions for transfer coefficients under conditions of small inhomogeneity in cases where the perturbing force can be represented as a small additional term in the Hamiltonian of the system. In the case of "thermal" perturbations, this type of representation runs into difficulties. However, it has been shown that a canonical transform can be used to "create" a flux corresponding to shear viscosity, giving a perturbing term in the Hamiltonian which describes flow with a non-zero shear tensor. At the same time, use of the canonical transform is a formal procedure, and from the physical standpoint the fluxes in the system arise due to interaction between particles and walls. It is shown in this paper that the interaction of particles

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USSR

LAGAR'KOV, A. N., SERGEYEV, V. M., Teplofizika Vysokikh Temperatur, Vol 11, No 2, Mar/Apr 73, pp 233-237

with walls in the case where the characteristic times of flux change are much greater than the relaxation time in the system can be accounted for by analogy with the virial theorem for the equilibrium case. This leads to replacing the potential of the walls with an "effective potential" which is defined in a natural way from the virial theorem. By treating this potential as an additional term in the Hamiltonian, expressions are found in the theory of linear response for thermal transfer coefficients, and it is shown that the given procedure is equivalent to the method of canonical transformation used to obtain viscous flow. At the same time, the effective potential is determined for the energy flux, and an infinitesimal transform is found which can be used in deriving a formula for the coefficient of thermal conductivity. The authors thank I. Z. Fisher for discussing the work.

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USSR

UDC 621.375.132.9(088.8)

S
SERGEYEV, V. M., ROYTMAN, M. S.

"Amplifier with Parallel Control"

USSR Author's Certificate No 254575, Filed 30 Apr 67, Published 11 Mar 70
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9D128P)

Translation: This author's certificate introduces an amplifier with parallel control and series power supply for the input and output transistors with respect to direct current. In order to improve the phase-frequency characteristic and increase the linearity of the amplitude characteristic and temperature stability, the input transistor is included with respect to a circuit with a common base, and a series connected resistor and capacitor are introduced between the base of this transistor and the emitter of the output transistor included with respect to a circuit with a common collector.

1/1

1/2 014
UNCLASSIFIED
TITLE--EXPERIMENTAL DETERMINATION OF CERTAIN AUTOMOBILE PARAMETERS ON A
TILTING STAND -U-
AUTHOR--(03)-AKSENOV, P.V., NIKANDROV, V.S., SERGEYEV, V.N.
COUNTRY OF INFO--USSR
SOURCE--MOSCOW, AVTOMOBIL'NAYA PROMYSHLENNOST', NO 2, 1970, PP 29-31
DATE PUBLISHED--70
SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, METHODS AND EQUIPMENT
TOPIC TAGS--AUTOMOBILE, PARAMETER, TEST STAND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1999/1217
STEP NO--UR/0113/70/000/002/0029/0031
CIRC ACCESSION NO--AP0123181
UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123181

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE PROCEDURE AND RESULTS ARE GIVEN FOR DETERMINING CERTAIN AUTOMOBILE PARAMETERS: ANGLE OF TRANSVERSE STATIC STABILITY, UPPER COORDINATE OF THE CENTER OF GRAVITY, ANGULAR RIGIDITY OF THE CARRYING SYSTEM (FRAME), AND SUSPENSION. THIS WAS DONE USING A SPECIAL TILTING STAND.

UNCLASSIFIED

USSR

UDC: 539.184 /

VYLOV, Ts.; DZHELEPOV, B. S.; IVANOV, R. B.; MIKHAYLOVA, M. A.; SERGEYEV, V. O.

"Relative Intensities of X-Rays of the K-Series of Elements With $Z = 79-88$ "

Moscow, Izvestiya Akademii Nauk SSSR: Seriya Fizicheskaya, Vol 26, No 10, Oct 72, pp 2136-2138

Abstract: The authors measure the relative intensities of x-ray lines of ^{79}Au , ^{80}Hg , ^{81}Tl , ^{82}Pb , ^{84}Po , ^{85}At , ^{86}Rn , ^{87}Fr , and ^{88}Ra . The measurements were made on a gamma-spectrometer with a plane-parallel Ge(Li)-detector. The diameter of the detector was 10 mm, and the thickness of the sensitive region was 6 mm. The input window was made from beryllium with 250-um thickness. The resolution in the investigated energy region (80 keV) was about 850 keV. The mean weighted values of the ratios $K\alpha_2/K\alpha_1$, $K\beta_1'/K\alpha_1$, and $K\beta_2'/K\alpha_1$ are tabulated. The authors thank L. G. Tsaritsyna and A. V. Mozzhukhin for preparing the sources.

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USSR

UDC 612.115+612.275.1

SERGEYEV, V. P., Chair of Pathophysiology, Central Scientific Research Laboratory, Kirgiz Medical Institute, and Oshskaya Oblast Hospital

"Some Indices of Blood Coagulation in Healthy Persons Living in Low, Medium and High Mountains of Southern Kirgizia"

Frunze, Sovetskoye Zdravookhraneniye Kirgizii, No 4, Jul/Aug 70, pp 28-30

Abstract: Various hematological indices (coagulation time, prothrombin index, fibrinogen concentration, factor V, factor VIII, free heparin, plasma tolerance for heparin, clot retraction, fibrinolytic activity, thrombocyte count, and leukocyte count) were determined in healthy persons 18 to 35 years of age living in localities 900 m, 2000 m, and 3200 m above sea level. Blood coagulation was found to be directly related to the altitude at which the individuals lived. An increase in the content of procoagulants, a decrease in anticoagulant activity, an intensification of fibrinolysis, and a relative increase in total coagulability were noted with increasing altitude. These shifts are considered to be the result of adaptive mechanisms which develop in response to high-altitude hypoxia and the establishment of the coagulating and anticoagulating properties of the blood on a new physiological level. They ensure the free circulation of blood and normal hemostasis after functional loads.

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USSR

UDC 621.762.2.001:669.293.784

LYUDVINSKAYA, T. A., SINEL'NIKOVA, V. S., KOSOLAPOVA, T. YA., and SERGEYEV, V. P.

"Investigation of a Method of Obtaining Niobium Carbide Powder and Coatings From the Vapor-Gas Phase"

V sb. Tugoplavk. karbidy (The Refractory Carbides -- collection of works), Kiev "Nauk. Dumka," 1970, pp 28-32 (from RZh-Metallurgiya, No 3, Mar 71, Abstract No 3G338 by authors)

Translation: An investigation is made of the possibility of obtaining niobium carbide by the method of precipitation from a vapor-gas mixture in the 1500-1900° range in the form of powder and coatings. The precipitation rate is studied as a function of reagent concentration, substrate temperature, and H₂ feed rate. The maximum rate of niobium carbide precipitation was observed at the optimum 10:1 ratio of H₂ to the sum of chlorides. The authors investigate the possibility of applying the coatings to graphite, tungsten, molybdenum, and niobium. Three illustrations. Two tables. Bibliography with eight titles.

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UDC 535.853.3

GERASIMOV, F. M., SERGEYEV, V. P., TEL'EVSKIY, I. A., and SERGEYEV, V. V.

"Optoelectronic Servo System for Controlling the Making of Diffraction Gratings"

Leningrad, Optika i Spektroskopiya, Vol 28, No 6, Jun 70, pp 1190-1203

Abstract: The article describes an optoelectronic servo system developed by the authors for controlling the ruling engine for the making of diffraction gratings. The system permits continuous and high-precision synchronization of the movement of the grating being fabricated and the diamond cutter which inscribes the lines. The system is based on the principle of a selsyn connection between the ruling carriage and the main shaft of the machine. The optoelectronic block measures the movement of the ruling carriage over the interference moiré fringes and acts as a transmitting selsyn. All elements of the electronic block use semiconductor devices. Adjustments are made by changing the rotational speed of the worm of the ruling engine through

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USSR

UDC: 542.65:546.289

MOROZOV, V. N. and VENEDIKTOV, A. A.

"Kinetics of Crystallization and Natural Aging in Germanium Dioxide"

Minsk, Zhurnal Prikladnoy Spektroskopii, Vol 13, No 3, September 1970, pp 549-551

Abstract: Since the broad use of GeO_2 for manufacturing new types of glass requires a detailed study of the transitions in GeO_2 for various modes of thermal processing, the authors have undertaken the experiments described in this paper. Their primary purpose is to investigate the interactions of GeO_2 in vitreous form with the atmosphere because that substance is a hygroscopic material. There is little available data in the literature on this point. The method of infrared spectroscopy was primarily used in this research. Included in the scope of the experiments was the natural aging of vitreous GeO_2 under the action of the atmosphere. As the reason for their interest in this subject, the authors cite the fact that of all the oxides of elements in the IV column of the periodic table, GeO_2 is unique in that it is readily soluble in water. In concluding, they express their gratitude to V. A. Florinskaya, V. N. Polukhin, V. A. Frank-Kamenetskiy, and G. I. Lisyuk for their assistance.

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1/3 027
UNCLASSIFIED
TITLE--THE SYNDROME OF ADDUCCENT LOOP AFTER RESECTION OF THE STOMACH -U-
AUTHOR--(02)-CHISTOVA, M.A., SERGEYEV, V.V.
COUNTRY OF INFO--USSR
SOURCE--KHIRURGIYA, 1970, NR 4, PP 40-48
DATE PUBLISHED-----70
SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES
TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, SURGERY, STOMACH, LIVER,
GALLBLADDER, PANCREAS, DUODENUM, SECRETION, BILE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1983/1214
CIRC ACCESSION NO--AP0054110
STEP NO--UR/0531/70/000/004/0040/0048
UNCLASSIFIED

2/3 027

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054110

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS OBSERVED 61 PATIENTS WITH A CHRONIC SYNDROME OF ADDUCENT LOOP, IN ONE OF THEM THERE WAS AN INTERMITTENT ACUTE OCCLUSION OF THE ADDUCENT LOOP. A MILD FORM OF THE SYNDROME WAS DIAGNOSED IN 20 PATIENTS, MODERATE SEVERITY, IN 29, SEVERE, IN 11 PATIENTS. THE MECHANICAL CAUSES OF IMPAIRED EVACUATION FROM THE ADDUCENT LOOP WERE REVEALED IN 36 PATIENTS: IN 22, REFLUX IN TO THE ADDUCENT LOOP, IN 14, STENOSIS OF THE ADDUCENT LOOP. THE MULTIFORM SYMPTOMATICS OF THE SYNDROME OF ADDUCENT LOOP IS ASSOCIATED WITH THE MECHANISM OF OCCURRENCE OF IMPEDED EVACUATION FROM THE ADDUCENT LOOP, LOCALIZATION OF THE SITE OF IMPAIRED OUTFLOW OF THE CONTENTS OF THE ADDUCENT LOOP, VOLUME AND ELASTICITY OF THE INTESTINAL SECTION, PARTIAL OR COMPLETE OCCLUSION OF THE ADDUCENT LOOP, THE DURATION OF IMPAIRED PATENCY IN THE ADDUCENT LOOP, REACTION OF THE LIVER, GALLBLADDER AND PANCREAS TO OBSTRUCTION IN THE DUODENUM, COMPLICATIONS OF THE DUODENAL STUMP, DISTURBANCES OF HYDROIONIC AND ACID BASE STATE DUE TO THE LOSS OF A SIGNIFICANT QUANTITY OF BILE, PANCREATIC JUICE AND SECRETA OF THE DUODENUM. IN THE CLINICAL PICTURE THE MOST PROMINENT IS PAIN OF EXPULSIVE OR SEIZURE LIKE CHARACTER IN THE EPIGASTRIC REGION, RIGHT SUBCOSTIUM AND BILE VOMITING. THE STUDIES HAVE SHOWN THAT IN PATIENTS WITH A CHRONIC SYNDROME OF ADDUCENT LOOP (MODERATE AND SEVERE) THE FOLLOWING ARE OBSERVED: REDUCTION OF THE EXCRETORY FUNCTION OF THE LIVER, SHORTENING OF THE LATENT PERIOD OF CONTRACTION OF THE GALLBLADDER AND INCREASED FORCE OF ITS CONTRACTION, DECREASE OF DIGESTION AND ASSIMILATION OF FATS.

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UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054110

ABSTRACT/EXTRACT--CHOICE OF THE METHOD OF RECONSTRUCTIVE OPERATION WAS BASED ON ASSESSMENT OF THE GENERAL STATE OF THE PATIENT, CHARACTER OF ANATOMICAL CHANGES, REVEALED DURING THE REPEATED OPERATION, 25 PATIENTS WERE OPERATED: SECONDARY JEJUNOGASTROPLASTY WAS DONE IN 10 PATIENTS, RECONVERSION OF BILLROTH II INTO BILLROTH I IN 9 PATIENTS, SECTION OF THE ADDUCENT LOOP AND PLACEMENT OF AN Y FORM ENTEROENTEROSTOMY ANASTOMOSIS, IN ONE PATIENTS AND PALLIATIVE OPERATIONS, IN 4 PATIENTS WITH A RELAPSE OF CANCER OF THE STOMACH. RECONSTRUCTIVE OPERATIONS ELIMINATE THE OBSTRUCTION IN THE ADDUCENT LOOP, CREATE CONDITIONS FOR IMPROVEMET OF THE FUNCTION OF THE HEPATOPANCREATODUODENAL SYSTEM.

UNCLASSIFIED

1/2 015

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--THE MECHANISM OF IMMUNOGENESIS IN VACCINATION WITH S PRIMED MUTANTS
OF SALMONELLAE AND SHIGELLAE, REPORT II. NONSUSCEPTIBILITY OF MICE TO S.
AUTHOR--(05)-SERGEYEV, V.V., FROLOVA, M.A., PROTASOVA, O.V., YELKINA, S.I.,
SHUSTER, B.YU.
COUNTRY OF INFO--USSR

SOURCE--ZHURNAL MIKROBIOLOGII, EPIDEMIOLOGII I IMMUNOBIOLOGII, 1970, NR 5,
PP 126-130
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SALMONELLA, SHIGELLA, BACTERIA MUTATION, IMMUNIZATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1994/0141

STEP NO--UR/0016/70/000/005/0126/0130

CIRC ACCESSION NO--AP0114537

UNCLASSIFIED

2/2 015

CIRC ACCESSION NO--AP0114537

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN COMPARING THE IMMUNOGENIC PROPERTIES THE AUTHORS FOUND THE VACCINE PREPARED FROM THE LIVE S PRIMED CULTURE OF S. ENTERITIDIS BACTERIA TO BE MORE EFFECTIVE IMMUNOLOGICALLY THAN THE VACCINE MADE OF KILLED BACTERIA OF A VIRULENT STRAIN. ALONG WITH INTENSE SPECIFIC IMMUNITY, ORAL IMMUNIZATION WITH S PRIMED MUTANT ALSO PRODUCED THE DEVELOPMENT OF NONSPECIFIC RESISTENCE. IMMUNOLOGICAL RECONSTRUCTION OF CELLS OF THE RETICULOENDOTHELIAL SYSTEM AND OF THE INTESTINE WAS ESTABLISHED BY THE REACTION OF CELLULAR PASSIVE SKIN ANAPHYLAXIS.

FACILITY: MOSCOW INSTITUT VAKTSIN I SYVOROTOK IM.

MECHNIKOVA.

UNCLASSIFIED

USSR

UDC 576.851.214 (Enterococcus).06

SHUSTER, B. YU., LIKHODED, V. G., SERGEYEV, V. V., YELIKINA, S. I., and
LITAREV, V. A., Moscow Institute of Vaccines and Sera Iueni Mechnikov

"Transduction Analysis of the Virulence of Revertants of *S. enteritidis*
Streptomycin-Dependent Mutants"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 12, 1971,
pp 58-62

Abstract: Using the transduction method with phage P 22, the authors found that the virulence of avirulence of revertants of *S. enteritidis* No 921 str-d mutants varied with the nature of the reverse mutation. Virulence was restored in the true revertants while the suppressor revertants remained avirulent. In transduction of markers from the virulent str-r strain to the suppressor avirulent revertants, the str-r transductants exhibited segregation with respect to virulence. The virulence of the transductants was due to substitution of the su-str⁻ gene suppressor for the su-str⁺ gene suppressor. It would appear, therefore, that mutation in the su-str gene suppressor results in the loss of virulence.

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USSR

• UDC 615.214.24:547.854.5].015.2:615.285.7

LINYUCHEV, R. M., MIMA, YU. P., SERGEYEV, V. V., Military Medical Academy imeni S. M. Kirov, Leningrad

"Effect of Phenobarbital on Toxicity and Anticholinesterase Activity of Chlorophos"

Moscow, Gigiyena Sanitariya, No 10, 1972, pp 106-107

Abstract: A study was made of the role of the liver of experimental animals in the detoxication of chlorophos and the effect of activity stimulators (phenobarbital) of the microsomal enzymes of the liver on its toxicity and anticholinesterase activity. Two series of experiments were performed on white male mice weighing 18-22 grams. In the first series of experiments a study was made of the effect of the phenobarbital on the resistance of the mice to the toxic effect of chlorophos on intraperitoneal and peroral administration of it. The difference in LD₅₀ ration for the experimental and control mice in both cases offers the possibility of proposing that the chlorophos in the liver is converted to a less toxic compound, and stimulation of the enzyme systems of the liver microsomes by phenobarbital causes a significant increase in resistance of the experimental animals to the chlorophos. In the second series of experiments performed with three groups of mice under analogous conditions, the effect of the phenobarbital on the anticholinesterase

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LINYUCHEV, N. M., et al., Gigiyena Sanitariya, No 10, 1972, pp 106-107

activity of the chlorophos was studied. Percoral administration of chlorophos in a dose of 455 mg/kg (LD_{16}) in mice treated with phenobarbital causes an expressed decrease in the degree of suppression of the cholinesterase activity of the brain. Whereas in the control mice the residual activity of the brain cholinesterase was 24.5%, against the phenobarbital background it was 42%. Phenobarbital does not decrease the anticholinesterase activity of the chlorophos in the blood. The data agree with the opinion of Arthur and Casida [J. Agricult. Food Chem., Vol 5, 186, 1957] that preliminary treatment with phenobarbital raises the resistance of experimental animals to the toxic effect of chlorophos by accelerating the enzymic hydrolysis of the poison in the liver with the formation of nontoxic products.

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UDC 535.853.3

USSR

GERASIMOV, F. M., SERGEYEV, V. P., TEL'EVSKIY, I. A., and SERGEYEV,
V. V.

"Optoelectronic Servo System for Controlling the Making of Diffraction
Gratings"

Leningrad, Optika i Spektroskopiya, Vol 28, No 6, Jun 70, pp 1196-1203

Abstract: The article describes an optoelectronic servo system developed by the authors for controlling the ruling engine for the making of diffraction gratings. The system permits continuous and high-precision synchronization of the movement of the grating being fabricated and the diamond cutter which inscribes the lines. The system is based on the principle of a selsyn connection between the ruling carriage and the main shaft of the machine. The optoelectronic block measures the movement of the ruling carriage over the interference moiré fringes and acts as a transmitting selsyn. All elements of the electronic block use semiconductor devices. Adjustments are made by changing the rotational speed of the worm of the ruling engine through

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